



6AF4

# UHF OSCILLATOR TRIODE

MINIATURE TYPE

6AF4

## GENERAL DATA

### Electrical:

Heater, for Unipotential Cathode:

Voltage . . . . .	6.3	ac or dc volts
Current . . . . .	0.225	amp
Resonant Frequency (Approx.) . . . . .	1000	Mc
Direct Interelectrode Capacitances (No external shield):		
Grid to Plate . . . . .	1.9	$\mu\text{mf}$
Grid to Cathode and Heater . . . . .	2.2	$\mu\text{mf}$
Plate to Cathode and Heater . . . . .	0.45	$\mu\text{mf}$

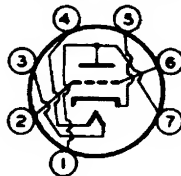
### Characteristics—Class A<sub>1</sub> Amplifier:

Plate Voltage . . . . .	80	100	volts
Cathode-Bias Resistor . . . . .	150	150	ohms
Amplification Factor . . . . .	15	16	
Plate Resistance . . . . .	2270	2130	ohms
Transconductance . . . . .	6600	7500	$\mu\text{mhos}$
Plate Current . . . . .	16	20	ma

### Mechanical:

Mounting Position . . . . .	Any
Maximum Overall Length . . . . .	2-1/8"
Maximum Seated Length . . . . .	1-7/8"
Length, Base Seat to Bulb Top (Excluding tip) . . . . .	1-1/2" $\pm$ 3/32"
Maximum Diameter . . . . .	3/4"
Bulb . . . . .	T-5-1/2
Base . . . . .	Small-Button Miniature 7-Pin (JETEC No. E7-1)
Basing Designation for BOTTOM VIEW . . . . .	7DK

Pin 1—Plate  
Pin 2—Grid  
Pin 3—Heater  
Pin 4—Heater



Pin 5—Cathode  
Pin 6—Grid  
Pin 7—Plate

## OSCILLATOR IN UHF TELEVISION RECEIVERS

### Maximum Ratings, Design—Center Values:

DC PLATE VOLTAGE . . . . .	150 max.	volts
DC GRID VOLTAGE . . . . .	-50 max.	volts
DC GRID CURRENT . . . . .	8 max.	ma
PLATE INPUT . . . . .	2.5 max.	watts
PLATE DISSIPATION . . . . .	2.25 max.	watts
DC CATHODE CURRENT . . . . .	28 max.	ma
PEAK HEATER-CATHODE VOLTAGE: ♦		
Heater negative with respect to cathode . . . . .	80 max.	volts
Heater positive with respect to cathode . . . . .	80 max.	volts

▲: See next page.

JULY 1, 1952

TUBE DEPARTMENT  
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

TENTATIVE DATA

6AF4



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## UHF OSCILLATOR TRIODE

## Typical Operation as Oscillator at 950 Mc:

DC Plate Voltage . . . . .	100	volts
DC Grid Voltage . . . . .	-4	volts
From a grid resistor of . . . . .	10000	ohms
DC Plate Current . . . . .	22	ma
DC Grid Current (Approx.) . . . . .	400	$\mu$ amp
Useful Power Output . . . . .	160	milliwatts

## Maximum Circuit Values:

## Grid-Circuit Resistance:

For fixed-bias operation . . . . .	Not recommended
For cathode-bias operation . . . . .	0.5 max. megohm

♦ It is recommended that the heater be kept at cathode potential to minimize the effects of variation in the heater-to-cathode capacitance between tubes.

## OPERATING CONSIDERATIONS

The *mounting arrangement* should insure that the tube is held secure by its socket. Unless this recommendation is followed, the generated frequency may change by as much as 10 megacycles per second. Use of a conventional miniature tube shield and external clamping arrangement are recommended.

The *base pins* of the 6AF4 fit the miniature 7-contact socket. The *socket* should be of the mica-filled, rubber, or ceramic type.

JULY 1, 1952

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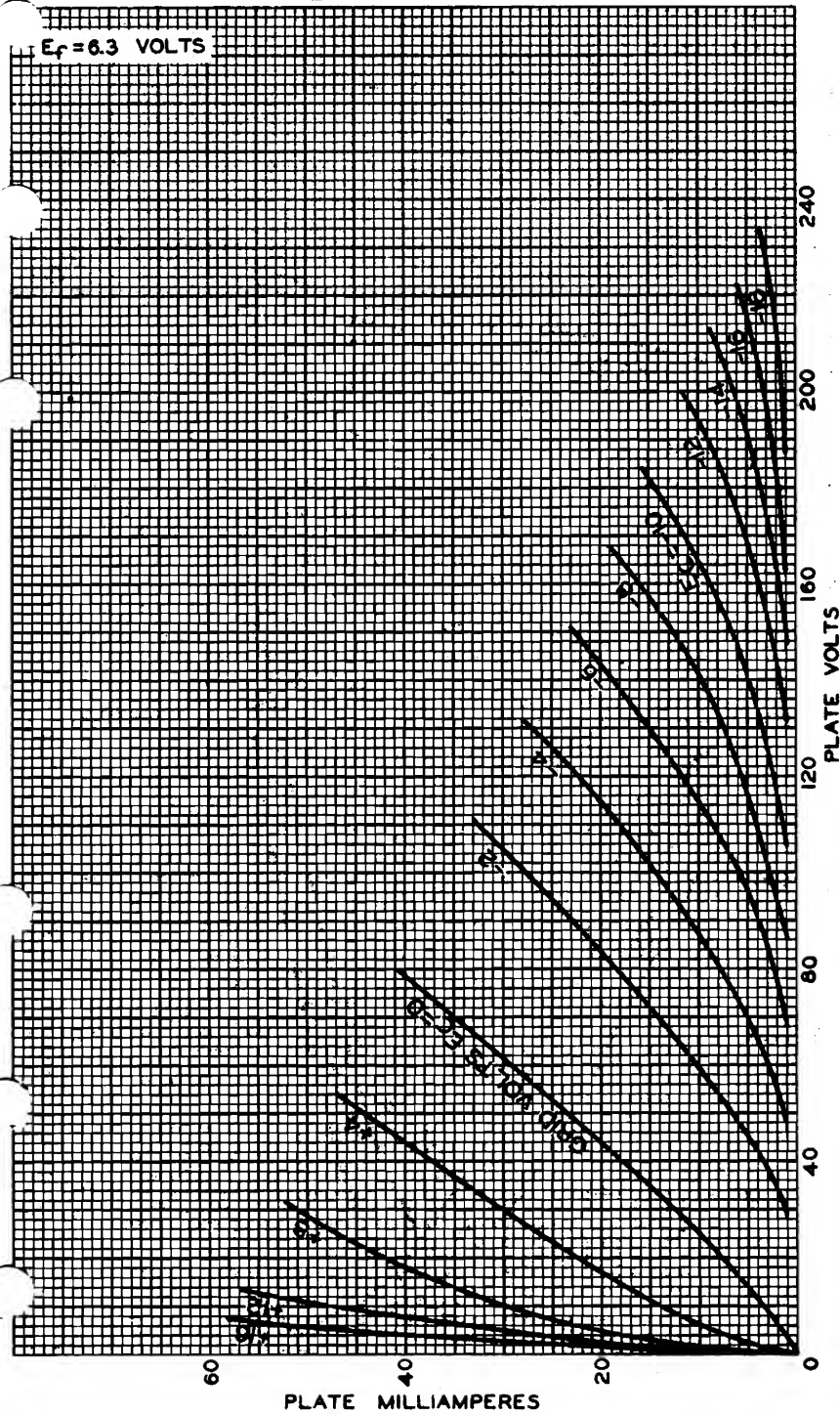
TENTATIVE DATA



6AF4

# AVERAGE PLATE CHARACTERISTICS

$E_f = 6.3$  VOLTS



FEB. 20, 1952

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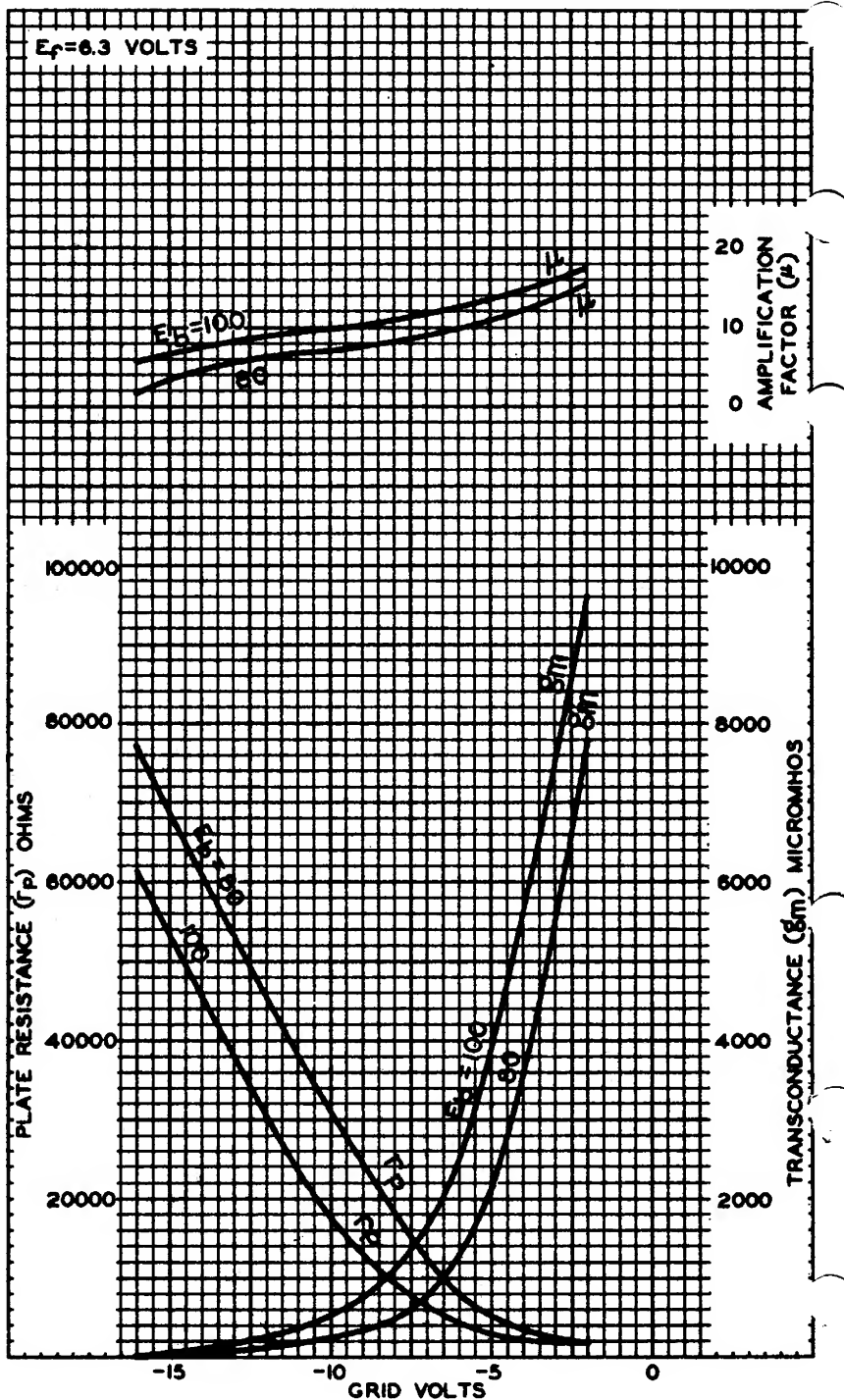
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# AVERAGE CHARACTERISTICS



FEB. 26, 1952

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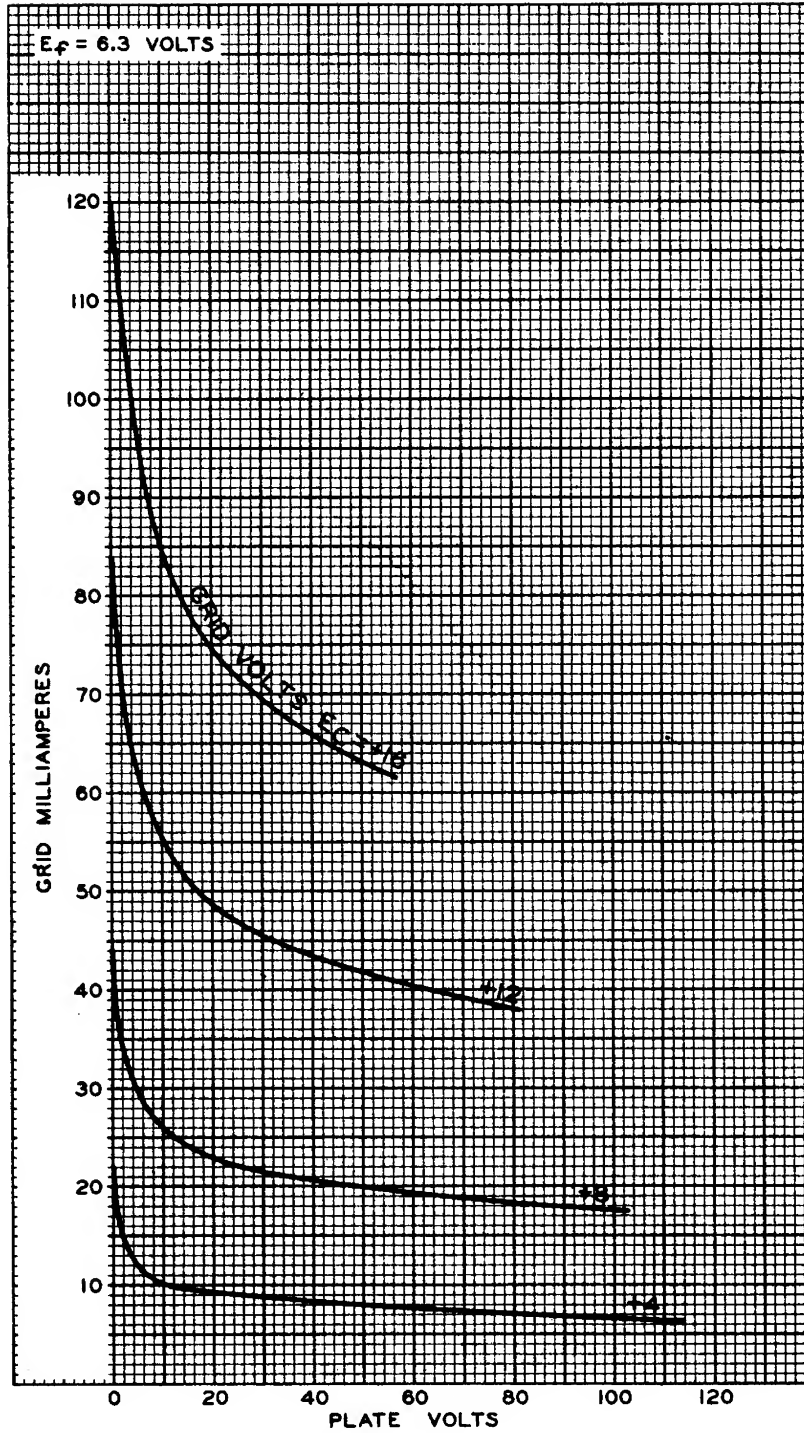
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### AVERAGE CHARACTERISTICS



MAR. 19, 1952

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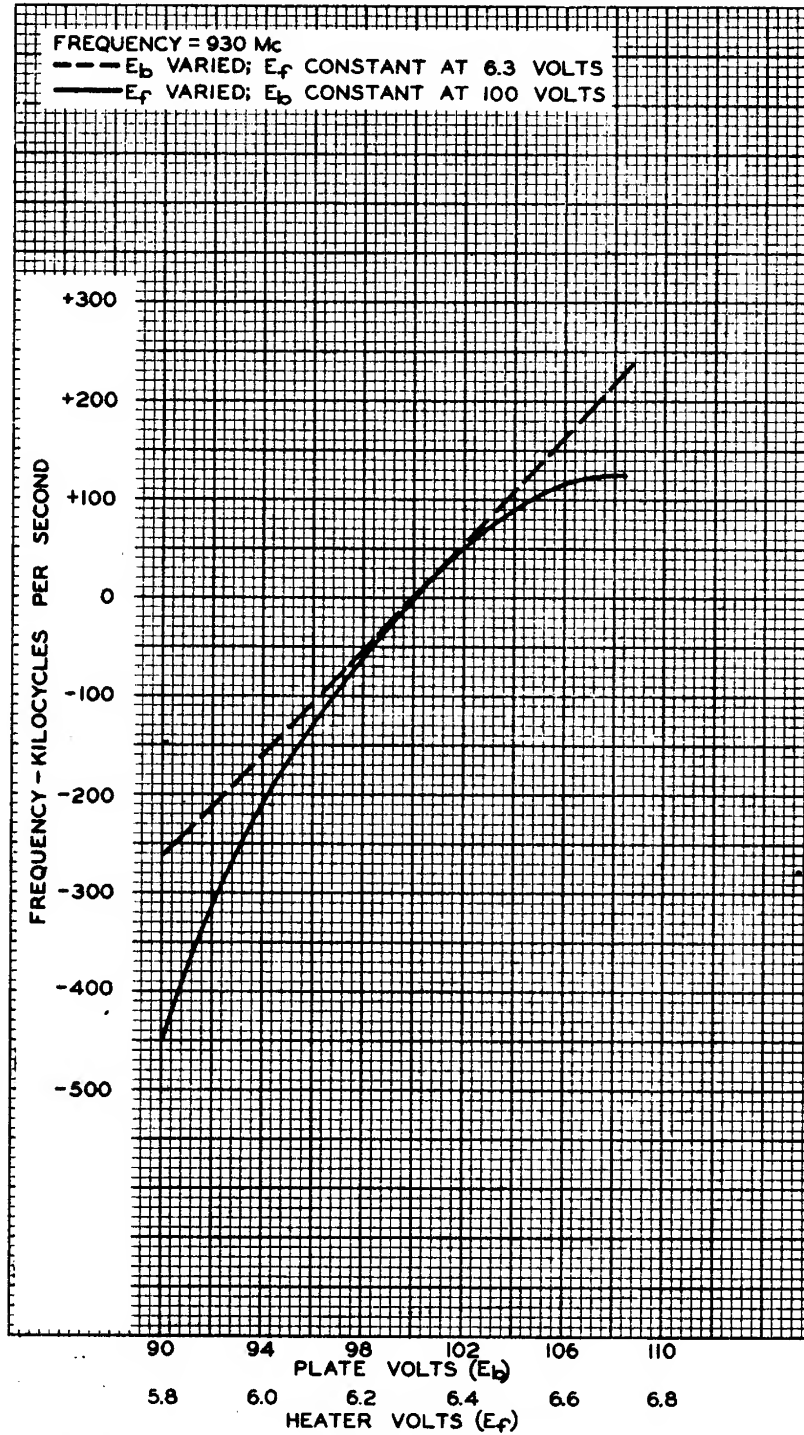
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## FREQUENCY SHIFT CHARACTERISTICS



FEB. 29, 1952

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